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THE GENUS *SINEA* OF *AMYOT* & *SERVILLE*.

BY A. N. CAUDELL, WASHINGTON, D. C.

The species of the genus *Sinea* are for the most part quite closely allied, and persons other than special students of the Hemiptera are liable to experience difficulty in their separation. In some cases both sexes are necessary for a correct determination.

In my studies I have examined specimens of all the described species of this genus except *integra*. The material in the collections of the United States National Museum, Massachusetts Agricultural College, Colorado Experiment Station, and the Museum of the State of New York, has been examined. In addition Professor Uhler has kindly allowed me to examine the specimens of *Sinea* in his private collection. For authentic specimens of *raptoria*, *caudata*, *sanguisuga* and *defecta* I am indebted to Mr. G. C. Champion, also, for advance sheets of his most excellent article on this genus in the *Biologia Centrali Americana*. This eminent author has been freely quoted. By reason of his well-known ability as an hemipterist and by his having examined most of Stål's types his dictum may well be accepted as final.

A plate is given showing certain anatomical details. The external appearance of the male and female genitalia is portrayed by drawings made from *Acholla multispinosa*, an insect scarcely differing, in this particular feature, from the species of *Sinea*.

A complete bibliography, so far as known to me, is given with each species. While some of the references are of minor importance it has seemed well to bring them together. All references have been verified except where preceded by a star (*).

I would express my thanks to Prof. C. H. Fernald for various kindnesses, to Mr. O. Heidemann for aid and advice, and to Mrs. Fernald and Dr. Dyar for aid in translating.

The species of the genus *Sinea* vary much both in size and color. In general they are somber colored and in cabinet specimens they vary many shades, from light cinnamon to almost black. If a specimen is killed soon after transformation the integument will not have become fully hardened and as a result the color is liable to be pale. The width of the abdomen varies considerably, especially in the female, where it is often greatly distended with eggs. In short both size and coloration are so variable as to be usually unreliable as specific characters.

Sinea Amyot & Serville.

Sinea AMYOT et SERVILLE (pro parte), Hém., 1843, p. 375; STÅL, Stett. Ent. Zeit., XXII, 1861, pp. 137, 139; *ibid.*, XXIII, 1862, p. 443; Hem. Afric., III, 1865, p. 47; Enum. Hem., II, 1872, pp. 67, 70; GLOVER, MS. Notes from my Journ., 1876, p. 110; LETH. & SEVERIN, Cat., III, 1896, p. 198; CHAMPION, Biol. Cent. Amer. Rhync., II, 1899, p. 291.

The genus *Sinea*, which, according to Glover, is from the Hebrew word "sene" meaning a prickly bush, was established in 1843 by Amyot and Serville. *S. diadema* Fab., is the type. The genus is recognized by the species having the anterior legs with a dorsal spine on the femora and spined below on both the femora and the tibiæ.

The species as now recognized may be separated by the following table. *Sinea spinipes* and *sanguisuga* are connected by intermediate forms and it seems questionable whether they should be considered distinct. The extremes, however, are so obviously distinct that I have thought it best to consider them as good species, especially as they are so recognized by both Uhler and Champion.

1.	{	Anterior prothoracic lobe armed on the disk with spines.....	2
		Anterior prothoracic lobe armed on the disk only with tubercles, sometimes acuminate but usually blunt.....	.6
2.	{	Posterior prothoracic lobe armed on the disk with sharp spines.....	3
		Posterior prothoracic lobe unarmed on the disk.....	4
3.	{	Anterior femora with the terminal spine of the inner inferior row out of alignment, occupying rather a sub-dorsal position.....	complexa Caud.
		Anterior femora with the terminal spine of the inner inferior row not out of alignment.....	integra Stål.
4.	{	Gibbosities on the disk of the posterior prothoracic lobe surmounted by a small tubercle. Sides of the female abdomen very prominently undulate.	undulata Uhl.
		Gibbosities on the disk of the posterior prothoracic lobe not surmounted by a small tubercle.....	5

5. { Margins of the female abdomen prominently undulate, the undulations usually sub-angulate. Male abdomen varying from almost entire to quite prominently undulate. Length, 12-14 mm.....**diadema** *Fab.*
 { Margins of the female abdomen usually inconspicuously undulate, sometimes more pronounced but rarely so prominent as in *diadema*; the undulations generally rounded. Abdomen of the male entire, or very slightly undulate. Length, 11-13 mm.....**confusa**, sp. nov.
6. { A pale fascia at the lateral extremity of each abdominal segment. Membrane of the hemelytra with a longitudinal dusky mark extending to the apex. Antecular spines generally short and somewhat blunt.....**rileyi** *Mont.*
 { The lateral extremity of the fourth abdominal segment without a pale fascia. Membrane of the hemelytra generally without a longitudinal dusky mark extending to the apex. Antecular spines variable.....7
7. { Antecular spines sharp and well defined, the pair next the eyes usually longer than the terminal pair8
 { Antecular spines blunt, short, usually mere tubercles, the pair next the eyes not distinctly longer than the terminal pair.....**defecta** *Stål.*
8. { Disk of the posterior prothoracic lobe bigibbous. Lateral margins of the abdomen, especially of the female, undulate, scarcely so in the males.....9
 { Disk of the posterior prothoracic lobe transversely convex, not distinctly bigibbous. Lateral margins of the abdomen not undulate in either sex.....10
9. { Abdomen of both sexes abruptly widened behind.....**coronata** *Stål.*
 { Abdomen of neither sex abruptly widened behind.....**confusa**, var.
10. { Abdomen of the male emarginate at the apex, subcaudate, margins sub-parallel.....**caudata** *Champ.*
 { Abdomen of the male sub-truncate at the apex, not caudate.....11
11. { Abdomen of the male with the margins sub-parallel, of the female widened to the apex of the fourth segment.....**raptorla** *Stål.*
 { Abdomen of both sexes directly widened to the apex of the fourth segment, but narrower in the male than in the female.....12
12. { Abdominal segment four and the basal half of segments five and six generally of the same color as the rest of the abdomen above, or slightly darker. First pair of antecular spines usually twice as long as the terminal pair. Usually less than 12 mm. in length.....**sanguisuga** *Stål.*
 { Abdominal segment four and the basal half of segments five and six generally much darker than the rest of the abdomen. First pair of antecular spines longer than the terminal pair, but seldom twice as long. Usually more than 12 mm. in length.....**spinipes** *Stål.*

***Sinea diadema* Fabr.**

(Plate I, Fig. 1, and Plate II, Figs. 3, 4, 5, 6.)

Cimex multispinosus DEGEER, Mem., III, 1773, p. 348 (pars).

Reduvius diadema FABRICIUS, Gen., 1776, p. 302; * Spec., II, 1781, p. 382; Ins. Mant., II, 1787, p. 313; Ent. Syst., IV, 1794, p. 206.

Cimex hispida THUNBERG, Nov. Ins. Sp., II, 1783, p. 33.

Cimex diadema GMELIN, Syst. Nat., I, IV, 1788, pp. 21, 96.

Cimex celosus GMELIN, Syst. Nat., I, IV, 1788, pp. 21, 44.

**Zelus diadema* FABRICIUS, Syst. Rhyng., 1803, p. 286.

Reduvius raptatorius SAY, Journ. Acad. Nat. Sc. Phil., IV, 1825, p. 327; Am. Ent., II, 1825, p. 72; Comp. Writings, I, 1859, p. 72; *ibid.*, II, 1859, p. 249; WALSH, Prairie Farm., July, 1863; Pract. Ent., II, 1867, p. 43; WALSH and RILEY, Amer. Ent., I, 1868, pp. 207, 249; RILEY, Inj. Ins. Mo., I, 1869, p. 114; SAUNDERS and REED, Can. Ent., III, 1871, p. 49; ROGERS, Can. Ent., V, 1873, p. 155; GLOVER, MS. Notes, Hem., 1876, pp. 64, 131.

Sinea multispinosa AMYOT and SERVILLE, Hem., 1843, p. 375; STÅL, Stett. Ent. Zeit., XXII, 1861, p. 139; *ibid.*, XXIII, 1862, p. 443 (part); WALKER, Cat. Hem. Brit. Mus., VIII, 1873, pp. 138, 9; DODGE, Field and Forest, II, 1876, p. 67; GLOVER, MS., Notes, Hem., 1876, pp. 67, 133; COMSTOCK, Cotton Insects, 1879, p. 169; HUBBARD, Orange Insects, 1885, p. 191; EBERHART, Elem. Ent., 1801, p. 132.

**Irantha hispida* STÅL, Cefr. Ak. Förh., 1866, p. 264.

Sinea diadema STÅL, Enum. Hem., 1872, p. 70 (part); UHLER, Bull. U. S. Geol. and Geog. Surv., No. 5, 2nd Ser., 1876, p. 326; Bull. U. S. Geo. and Geog. Surv., III, 1877, p. 429; *ibid.*, IV, 1878, p. 508; RILEY, Bull. No. 3, U. S. Ent. Com., 1880, p. 36; Supp. Mo. Rep., 1881, p. 58; 4th Rep. U. S. Ent. Com., 1885, p. 97; LINTNER, 1st Rep. Ins. N. Y., 1882, p. 331; *ibid.*, 11th Rep., 1896, p. 270; POPENOE, Trans. Kans. Acad. Sci., IX, 1885, p. 63; UHLER, Check List, Hem., 1886, p. 23; SAUNDERS, Ins. Inj. Fruit, 1889, p. 70; TOWNSEND, Proc. Ent. Soc. Washington, II, 1891, p. 55; BLAISDELL, Ins. Life, V, 1892, p. 35; HOPKINS, Bull. No. 32, W. Va. Agricul. Exp. St., 1893, p. 232; ASHMEAD, Ins. Life, VII, 1895, p. 321; GILLETTE and BAKER, Bull. No. 31, Colo. Agricul. Exp. St., 1895, p. 59; LETH. and SEVERIN, Cat. Hem., III, 1896, p. 198; HEIDEMANN, Proc. Ent. Soc., Wash., IV, 1899, p. 217; CHAMPION, Biol. Cent. Amer. Rhync., II, 1899, p. 292.

Length 12-14 mm. Anterior prothoracic lobe armed on the disk with long spines. Posterior prothoracic lobe unarmed, bigibbous on the disk. Margins of the female abdomen prominently undulate. Abdomen of the male varying from almost entire to quite prominently undulate.

Habitat: United States and Canada. Type, Mus. Holm.

I doubt the synonymy of Thunberg's *hispidus* as it was described from India. In Gmelin's Edition of Linnæus' Syst. Nat., I, (4), p. 2144, 1788, under the name *setosus*, it is said to inhabit America, Australia and India.

This species, as originally defined, occurred in Central America and Mexico as well as in the United States and Canada. But as recently pointed out by Mr. Champion, the form occurring in Central America is not *diadema*. This being true it may be doubted if *diadema* occurs south of the Mexican border.

This is our most common and best known species and is readily separable from all others, except *coronata*, *undulata* and *confusa*, by the distinctly undulated margins of the female abdomen. The spined anterior prothoracic lobe clearly separates it from *coronata* but from *confusa* it can be distinguished only by comparative differences, aided perhaps in some cases by the habitat. It differs from *undulata* only in minute details.

The figure of this species on the plate shows an average female specimen, the undulations of the abdomen probably being a little too much rounded. In a female specimen in the collection of the National Museum that is doubtfully referred to this species the posterior prothoracic lobe is not bigibbous on the disk and the margins of the abdomen are not at all undulate, though the edges show semi-transparent at intervals, giving them a distinctly undulated appearance.

The egg and first stage of the nymph of this species were described by Mr. W. H. Ashmead in *Insect Life* (Vol. VII, p. 321, 1895). As this, so far as I know, is the only description of immature forms of any of our *Sineas* the matter is here reproduced in full.

“Ova, Length, 1.5 mm. or a little more than twice as long as thick, of a cylindrical shape, rounded at bottom and truncate at top. The top is surmounted by a broad, silky, white, marginal fringe, in the center of which is a cone-shaped cap or lid, which is removed when the young nymph makes its exit from the egg.”

“A freshly laid cluster of these eggs, deposited Aug. 7th, hatched on the 17th, so that the duration of the egg state, under ordinary circumstances, can not be more than ten or twelve days. The eggs are deposited in clusters to the number of eight, ten, or more, on either the upper or lower surface of the (cotton) leaf, and are closely together in a sticky, dark honey-yellow, or reddish-yellow secretion.”

“Nymph, first stage. Length 1.8 mm., and of a piceous or shiny black color; the antennæ, except at extreme base, the apical half of middle and posterior tibiæ and all tarsi being brownish yellow, while the middle and hind legs, except as already noted, are dark, piceous. The antennæ are cylindrical, 4-jointed, as long as the body, the first and last joints being nearly equal in length, while the second and third united are a little shorter than the first; the head is large, oblong and smooth, widest anteriorly, and as long as the thorax, the beak is stout, extending to between the middle coxæ; the thorax is divided into two lobes, each of which bears a pair of spines; abdomen short and not longer than the hind lobe of the thorax; the anterior femora are longer and much stouter than the others and armed with strong spines above and beneath, their tibiæ shorter and slenderer, pilose and with three spines beneath; while the middle and hind legs are shorter and more slender, without spines although more or less pilose.”

It eats young cotton-worms and other insects in Mississippi.

***Sinea undulata* Uhl.**

Sinea undulata UHLER, Proc. Calif. Acad. Sc., IV, 1894, p. 282; LETH. & SEVERIN, Cat. Hemip., III, 1896, p. 199.

Brownish-cinereous, pale gray, pubescent, similar to *S. diadema*, but wider, with a shorter neck and femora, with the spines more numerous and crowded together on the front division of the head, with the carinate lines of the middle of the pronotum prominently and sharply defined, and the knobs each side of the base elevated, and surmounted by a little tubercle; three double series of spine-like black tubercles on the anterior lobe of the pronotum. Venter with a series of oblique, white spots on each side near the border; scallops of the lateral border more prominent and placed farther back than in *S. diadema*, the inner margin of corium white. Length to tip of venter 14-15 mm. Width of pronotum, 3 mm.

Habitat: California.

This species, which will probably prove to be a variety or aberration of *diadema*, is quite a characteristic appearing insect. The type has been seen and it seems to agree perfectly with the description. None of the many specimens of *Sinea* examined by me were referable to this species. The author's description is given above.

***Sinea confusa*, sp. nov.**

Sinea multispinosa STÅL, Stett. Ent. Zeit., XXIII, 1862, p. 443 (part).

Sinea diadema STÅL., Enum. Hemip., II, 1872, p. 70 (part).

Sinea undulata CHAMPION, Biol. Cent. Amer. Rhync., II, 1899, p. 292.

Length 10-13 mm. Prothoracic lobes as in *diadema*. Abdomen of the female generally inconspicuously undulate, sometimes more pronounced but never as prominent as in the typical *diadema*. The undulations usually rounded. Abdomen of the male entire, or very slightly undulate.

Habitat: Arizona. Type, no. 5364. U. S. Nat. Mus.

This species has hitherto been confounded with *diadema*. The two species do approach each other very closely but the extremes are conspicuously distinct. *Confusa* has been also confounded with *undulata*, but it is difficult to see how that could occur. The author's description of *undulata*, it seems, would preclude such a possibility.

Of this species I have seen specimens from California, Arizona and Texas in the United States and from various localities in Mexico and Central America. Its habitat will aid to an extent in separating it from *diadema*. Specimens sent from Mexico by Mr. Champion have the abdomens of the females very slightly undulate, while those of the males are practically entire.

In the discussion of this species under the name *undulata* Mr. Champion describes a variety thus: "Var. The spines on the head shorter, and those on the anterior lobe of the pronotum reduced to conical tubercles, the neck simply granulate (δ φ).” He found intermediate forms connecting the variety with the typical specimens. The variety is represented in the National Museum by both male and female specimens.

***Sinea coronata* Stål.**

(Plate I, Fig. 2.)

Sinea coronata STÅL, Stett. Ent. Zeit., XXIII, 1862, p. 444; WALKER, Cat. Hem. in Brit. Mus., VIII, 1873, p. 138, 9; UHLER, Bull. U. S. Geol. & Geog. Surv. No. 5, 2nd Ser. 1876, p. 61; UHLER, Check List Hem., 1886, p. 23; LETH. & SEVERIN, Cat. Hem., III, 1896, p. 199; CHAMPION, Biol. Cent. Amer. Rhync., II, 1899, p. 292.

Length, 13-15 mm. Anterior prothoracic lobe without spines on the disk, furnished only with conical tubercles. Posterior lobe unarmed, bigibbous on the disk. Abdomen of both sexes abruptly widened behind.

Habitat: United States, Mexico and Central America. Types, Mus. Holm and Coll. Sign.

This characteristic species is readily distinguished from all others by the abruptly widened abdomen in both sexes, as illustrated at fig. 2 on plate I. *Diadema* is its nearest ally, and from it it is distinguished at a glance by the anterior prothoracic lobe being without spines on the disk. It occurs in the southern and western United States, the specimens in the National Museum being from Texas.

***Sinea complexa* Caudell.**

(Plate I, Fig. 3.)

Sinea complexa CAUDELL, Can. Ent., XXXII, p. 67, 1900.

Length 8-11 mm. Anterior prothoracic lobe distinctly spined. Posterior lobe with well-defined spines on the disk, which is transversely convex, not bigibbous. Abdomen with well-rounded sides, margins entire. Anterior femora with the last two ventral spines of the inner row out of alignment, the terminal one the more so, being sub-dorsally located.

Habitat: This is a western species described from California and also collected in Arizona. A specimen in the collection of the National Museum is labelled "Alabama," probably erroneously so. Type no. 4433, U. S. Nat. Mus.

This well-marked little species is at a glance recognized from all the other species, *integra* alone excepted, by the posterior prothoracic lobe

being distinctly spined on the disk. The peculiar armature of the anterior femora serves to separate it from *integra*.

For the drawings illustrating this species I am indebted to Miss Lillie L. Howenstein.

***Sinea integra* Stål.**

(Plate I, Fig. 4.)

Sinea integra STAL, Stett. Ent. Zeit., XXIII, 1862, p. 443; Enum. Hemip., II, 1872, p. 71; WALKER, Cat. Hem. in Brit. Mus., VIII, 1873, p. 138, 9; UHLER, Check List Hem., 1886, p. 23; LETH. & SEVERIN, Cat. Hemip., III, 1896, p. 199; CHAMPION, Biol. Cent. Amer. Rhync., II, 1899, p. 294.

Both lobes of the prothorax armed with spines, disk of the posterior lobe convex. Abdomen not undulate. Anterior femora with none of the ventral spines out of alignment.

Habitat: Mexico and Central America. Type, Mus. Holm.

Mr. Champion examined the type of this species in the Signoret collection and found it to be a male *confusa* (*undulata*). He also examined the type (male) in the Stockholm Museum and presumably found it with the posterior prothoracic lobe spined as he expressly defines *integra* as a species with this character. By reason of his having seen nearly all the types of Stål's species his definition of *integra* is accepted with confidence.

Of all the specimens of *Sinea* examined by me I have found not one *integra*. Stål described it from Mexico and ten years later while writing of it he gives only Mexico as its habitat. I have seen American specimens labelled as *integra* but in every case they were either obvious mis-identifications or the males of *confusa* which they doubtless much resemble. It will probably develop that American authors have wrongly interpreted this species and that it is not native to the United States at all. Champion saw but six specimens, exclusive of the type. This would indicate that this is a comparatively rare species. It is said to resemble *diadema* in general form but the sides of the abdomen are not undulate and the posterior prothoracic lobe is not bigibbous on the disk. The figure is copied from Champion.

***Sinea caudata* Champion.**

(Plate I, Fig. 5.)

Sinea caudata CHAMPION, Biol. Cent. Amer. Rhync., II, 1899, p. 293.

Length 8-10.5 mm. Anterior prothoracic lobe armed with sharp tubercles, posterior lobe unarmed, convex. Margins of abdomen entire. Male abdomen subcaudate with the apex emarginate.

Habitat : Central America. Type Brit. Mus.

This Central American species is very closely allied to *S. raptoria* but the males may be separated by the apex of the abdomen as given in the table of species. The females are practically inseparable. The tubercles on the anterior lobe of the prothorax are somewhat more acute in *caudata* than in *raptoria*. The author had before him five males and six females.

***Sinea raptoria* Stål.**

(Plate I, Fig. 6.)

Sinea raptoria STÅL, Stett. Ent. Zeit., XXIII, 1862, p. 444; WALKER, Cat. Hemip. Heter. Brit. Mus., VIII, 1873, pp. 138, 139; UHLER, Bull. U. S. Geol. & Geog. Surv. No. 5, 2d Ser., 1876, p. 61; Check List Hemip., 1886, p. 23; LETH. & SEVERIN, Cat. Hemip., III, 1896, p. 199; HUBBARD, Supp. Psyche, 1899, p. 6; CHAMPION, Biol. Cent. Amer. Rhync., II, 1899, p. 293.

Sinea denticulosa STÅL, Enum. Hemip., II, 1872, p. 70; LETH. & SEVERIN, Cat. Hemip., III, 1896, p. 198.

Length, 8-11 mm. Anterior prothoracic lobe armed with short conical tubercles. Posterior lobe unarmed, convex on the disk. Abdomen entire, not caudate, subtruncate at apex.

Habitat : United States, Mexico and Central America. Types, Mus. Holm. and Coll. Sign.

Mr. Champion established the synonymy of *denticulosa* with *raptoria* by critically comparing their respective types and finding them inseparable.

This species is closely related to *caudata* and *sanguisuga*, but may be separated from them by characters given in the table. The males are necessary for a correct determination.

Raptoria is common to the United States, Mexico and Central America, but with us it has been recorded only from the western States.

***Sinea sanguisuga* Stål.**

(Plate I, Figs 7 and 8).

Sinea sanguisuga STÅL, Stett., Ent. Zeit., XXIII, 1862, p. 444; Enum. Hemip., II, 1872, p. 71; WALKER, Cat. Hem. Heter. Brit. Mus., VIII, 1873, p. 138, 139; UHLER, Check List Hem., 1886, p. 23; LETH. & SEVERIN, Cat. Hemip., III, 1896, p. 199; CHAMPION, Biol. Cent. Amer. Rhync., II, 1899, p. 294.

Length 10-13 mm. First pair of anteocular spines usually twice as long as the third pair. Thorax as in *raptoria*. Abdomen entire, outer angles of the fourth segment sometimes prominent or subdentiform, especially in the male, where sometimes the fifth segment is also slightly prominent. Segments four and basal half of segments five and six usually of the same color as the rest of the abdomen, sometimes slightly darker.

Habitat: United States, Mexico and Central America. Type, Mus. Holm.

The table will enable the student to separate this species from the other members of the genus. Some difficulty may be experienced in separating it from *spinipes* as the differences here are but relative. The abdomens of the males are usually sharply angulated on the fourth segment, sometimes also on the fifth. The specimens in the National Museum are from Texas.

***Sinea spinipes* Herr.-Sch.**

Harpactor spinipes HERRICH-SCHÄFFER, Wanz. Ins., VIII, 1848, p. 82.

Sinea spinipes STÅL, Enum. Hemip., II, 1872, p. 71; UHLER, Check List Hem., 1886, p. 23; LETH. & SEVERIN, Cat. Hemip., III, 1896, p. 199; CHAMPION, Biol. Cent. Amer. Rhync., II, 1899, p. 295.

Length, 12-15 mm. First pair of antecular spines seldom twice as long as the third. Thorax as in *sanguisuga*. Abdomen entire. The fourth and basal half of segments five and six of the abdomen generally conspicuously darker than the rest of the body, usually more constant in the females.

Habitat: United States, Mexico and South America?

This species was described and figured from South America by Herrich-Schaeffer in 1848, but it has never since been reported from that locality. In 1872 Stål gave its habitat as Mexico. It occurs all over the southern and central parts of the United States. Its closest ally is *sanguisuga* and the differences enumerated in the table will usually separate them. The range of *spinipes* seems to extend farther north than does that of *sanguisuga*, the latter species generally occurring only in the extreme southern states. The distinct black band across the abdomen especially in the females, will usually serve to separate it from its allies, though this is sometimes seen, to a lesser extent in *sanguisuga* and especially in *defecta*. The long antecular spines at once separated it from the latter species.

***Sinea rileyi* Montandon.**

Sinea rileyi MONTANDON, Proc. U. S. Nat. Mus., XVI, 1893, p. 51; UHLER, N.

A. Fauna, No. 7, 1895, p. 250; LETH. & SEVERIN, Cat. Hemip., III, 1896, p. 199; CHAMPION, Biol. Cent. Amer. Rhync., II, 1899, p. 295.

Length, 9.5-12 mm. Head with large tubercles or short blunt spines before the eyes instead of well developed spines. Anterior prothoracic lobe armed with tubercles, posterior lobe unarmed, convex on the disk. A pale fascia at the lateral extremity of each segment of the abdomen, which is entire and with the margins well rounded, not at all angulated at the sides in either sex. Membrane of the hemelytra with a longitudinal dusky mark extending to the tip, rarely obsolete or not easily seen.

Habitat: United States. Type, Coll. Montandon.

This species is somewhat allied to *sanguisuga* and related forms, but the short antecocular spines will serve to distinguish it from all except *defecta*, in which case the characters given in the table will serve to distinguish it. It was described from California and there are specimens in the National Museum from Texas and Arizona. There is also a single specimen labelled "North Carolina." This seems quite out of its ordinary range and the specimen may be wrongly labelled.

The antennæ of this species are obscurely ringed with pale bands on the first segment, in some cases scarcely visible.

Sinea defecta Stål.

(Plate I, Fig. 9.)

Sinea defecta STAL, Stett. Ent. Zeit., XXIII, 1862, p. 445; Enum. Hemip., II, 1872, p. 71; WALKER, Cat. Hemip. Heter. Brit. Mus., VIII, 1873, pp. 139, 140; UHLER, Check List Hemip., 1886, p. 23; LETH. & SEVERIN, Cat. Hemip., III, 1896, p. 198; CHAMPION, Biol. Cent. Amer. Rhync., II, 1899, p. 295.

Length, 11-13.5 mm. Head and thorax as in *rileyi*. Abdomen entire, segment four without a pale fascia. The fourth and basal half of segments five and six of the abdomen usually darker than the rest of the body, generally more constant in the females. Abdomen of the male with the apical angle of the fourth segment slightly prominent or subangulate. Membrane of the hemelytra without a longitudinal dusky mark.

Habitat: Mexico and Central America. Type, Museum Holm.

This species resembles *spinipes* in coloration, size and form but is at once distinguished from it, as well as from all others, by having only very short blunt spines or tubercles on the anterior part of the head. This character is shown at figure 9 on plate I.

EXPLANATION OF PLATE I.

- | | |
|-----------------------------------|-------------------------------------|
| Fig. 1. <i>Sinea diadema</i> FAB. | Fig. 6. <i>Sinea raptoria</i> STÅL. |
| Fig. 2. " <i>coronata</i> STÅL. | Fig. 7. " <i>sanguisuga</i> STÅL. |
| Fig. 3. " <i>complexa</i> CAUD. | Fig. 8. " <i>sanguisuga</i> STÅL. |
| Fig. 4. " <i>integra</i> STÅL. | Fig. 9. " <i>defecta</i> STÅL. |
| Fig. 5. " <i>caudata</i> CHAMP. | |

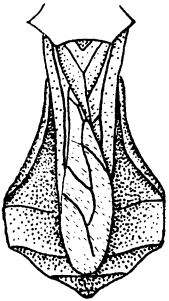
EXPLANATION OF PLATE II.

- | |
|-----------------------------------------------------------------------------|
| Fig. 1. <i>Acholla multispinosa</i> DEG. ♀. (Tip of abdomen, ventral view.) |
| Fig. 2. " " " ♀. (Tip of abdomen, apical view.) |
| Fig. 3. <i>Sinea diadema</i> FAB. (Hemelytron.) |
| Fig. 4. " " " (Wing.) |
| Fig. 5. " " " (Fore leg.) |
| Fig. 6. " " " (Claw.) |
| Fig. 7. <i>Acholla multispinosa</i> DEG. ♂. (Tip of abdomen, ventral view.) |
| Fig. 8. " " " ♂. (Tip of abdomen, apical view.) |

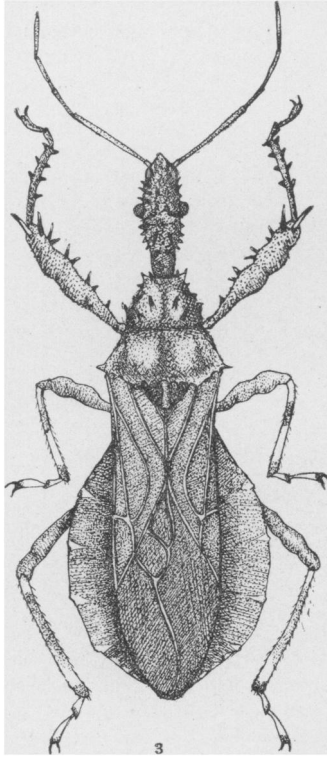


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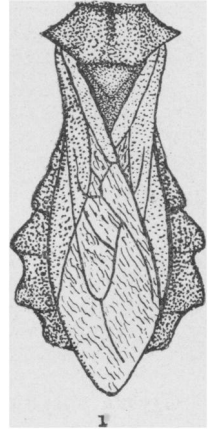
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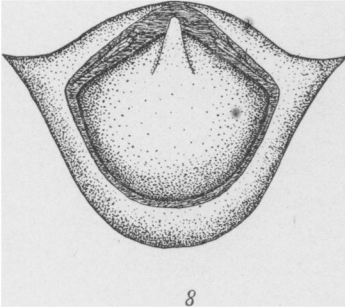
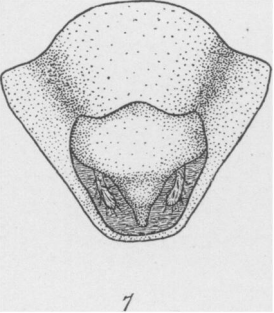
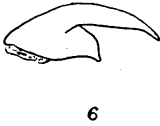
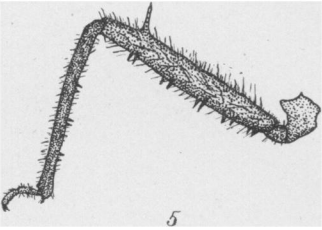
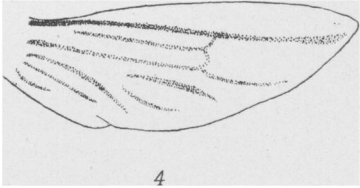
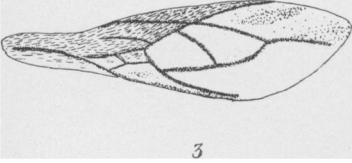
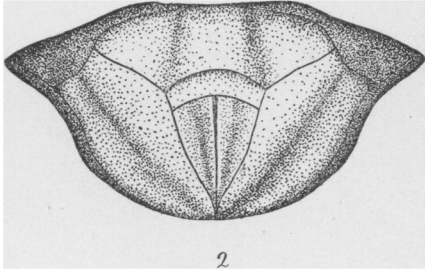
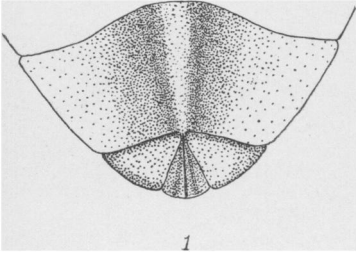


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4

The Genus *Sinea*.



The Genus *Sinea*.